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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,628	09/27/2001	Xiong Liu	1834.130US1	2482
7590	12/28/2004			
Kirk A. Cesari Seagate Technology LLC Intellectual Property Dept. - SHK2LG 1280 Disc Drive Shakopee, MN 55379-1863			EXAMINER NEGRON, DANIEL L	
			ART UNIT 2651	PAPER NUMBER

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,628

Applicant(s)

LIU ET AL.

Examiner

Daniell L. Negrón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-28 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-28 and 31-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 25-28 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron U.S. Patent No. 6,185,063 in view of Wiseloge U.S. Patent No. 6,061,197.

Regarding claim 25, Cameron discloses a method for writing data to a plurality of adjacent tracks on a data storage surface of a data storage device comprising the steps of writing data to a first track of the adjacent tracks with a write member (column 2, lines 55-59).

The method disclosed by Cameron also comprises moving the write member in a first radial direction to a second track adjacent to the first track and writing to the second track such that the data written to the first is encroached only on one side by the data written to the second track (column 2, line 64 through column 3, line 9) (column 7, lines 47-61).

Cameron however fails to show the specifics of defining a guard band adjacent to each of the first and last tracks of the plurality of adjacent tracks, the guard band having a width at least substantially the width of the write width or greater.

However, Wiseloge discloses a method for providing guard bands adjacent to data tracks wherein inner and outer guard bands (202 and 204) are written adjacent to each of the first and last tracks of adjacent tracks (203) at a wider track spacing for the purpose of improving disk drive performance by decreasing write inhibit events (column 2, lines 37-40, Fig. 4 and

disclosure thereof for details). Furthermore, Wiseloge discloses that the width of a write element is 200 micro-inches and that the adaptive track width of a track is 210 micro-inches. Wiseloge further shows that the inner guard band comprises 93 tracks and the outer guard band comprises 84 tracks each measuring approximately 210 micro-inches, therefore it is considered that both the inner and outer guard bands have a width at least substantially the width of the write width or greater (column 5, lines 5-25).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method for writing data to a plurality of adjacent tracks on a data storage surface disclosed by Cameron with the guard bands taught by Wiseloge in order to improve disk drive performance reduce errors that may occur due to servo off-track conditions.

Regarding claim 26, Cameron discloses a method for writing data to a plurality of adjacent tracks on a data storage device comprising writing data to last track of the adjacent tracks wherein one or more intermediate tracks are interposed between the second track and the last track (see Fig. 7), the write member moving only in the first radial direction in traversing the plurality of tracks such that all data written to a track is encroached only on one side by data subsequently written to the respective track (column 7, lines 62-67).

Regarding claim 27, Cameron discloses a method for writing data to a plurality of adjacent tracks on a data storage device wherein the write member defines an operable write width and the data storage device comprises a read member defining an operable read width (see Fig. 7), and wherein moving step comprises moving the write member a distance substantially equivalent to the read width between the tracks (column 8, lines 6-20). Cameron mentions that

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the invention disclosed allows the track density to be based on the width of the read head. It is inherent that in order to subsequently record data by encroaching as mentioned above, the write head is required to move a distance substantially equivalent to the read width in order to create tracks that are the substantially the size of the read head (see Fig. 7).

Regarding claim 28, Cameron discloses a method for writing data to a plurality of adjacent tracks on a data storage device comprising writing a sequential data record to a selected number of the plurality of adjacent tracks while moving the write member in the first radial direction between writing to adjacent tracks (column 8, lines 32-39).

Regarding claim 31, Cameron discloses a data storage device comprising a rotating disc assembly with a disc surface (see Figs. 3, 4, and 5, and elements 22 and 23) (column 6, lines 26-34).

Cameron further discloses a data storage device, which comprises a read transducer in operable transducing relationship to the disc surface defining a read width and a write transducer in operable transducing relationship to the disc surface defining a write width (column 5, lines 21-43).

Cameron further discloses a data storage device, which comprises a plurality of adjacent tracks on the disc surface disposed at a track-to-track spacing substantially equivalent to the read width (see Fig. 7) (column 8, lines 6-20).

Regarding claims 32-35, apparatus claims 32-35 are drawn to the apparatus corresponding to the method of using same as claimed in claims 26-28. Therefore apparatus claims 32-35 correspond to method claims 26-28, and are rejected for the same reasons of obviousness as used above.

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Response to Arguments

3. Applicant's response to the previous Office action (mailed on October 21, 2003) filed July 28, 2004, with respect to the rejection of claims 25-28 and 31-35 has been fully considered. However, upon further consideration, a new ground of rejection is made in view of Cameron U.S. Patent No. 6,185,063 and of Wiseloge U.S. Patent No. 6,061,197.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 703-305-6985. The examiner can normally be reached on Monday-Friday (8:30-6:00) Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh N. Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DLN

December 9, 2004


SINH TRAN
SUPERVISORY PATENT EXAMINER